

APTECH 46 Course Outline as of Fall 2017**CATALOG INFORMATION**

Dept and Nbr: APTECH 46 Title: INTRO TO CAD

Full Title: Introduction to Computer-Aided Drafting

Last Reviewed: 8/14/2023

Units	Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled 35.00
Minimum	2.00	Lab Scheduled	0.50	4	Lab Scheduled 8.75
		Contact DHR	0		Contact DHR 0
		Contact Total	2.50		Contact Total 43.75
		Non-contact DHR	0		Non-contact DHR 0

Total Out of Class Hours: 70.00

Total Student Learning Hours: 113.75

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: APTECH 56

Catalog Description:

Introduction to Computer-Aided Drafting (CAD) utilizing the AutoCAD software program.

Areas covered include: program organization, program commands and tools, view navigation, drawing set-up, geometric construction/editing, orthographic projection, dimensioning and text annotations, printing/plotting, and an introduction to 3-dimensional drafting/design.

Prerequisites/Corequisites:

Course Completion or Current Enrollment in APTECH 45 OR INDE 50

Recommended Preparation:**Limits on Enrollment:****Schedule of Classes Information:**

Description: Introduction to Computer-Aided Drafting (CAD) utilizing the AutoCAD software program. Areas covered include: program organization, program commands and tools, view navigation, drawing set-up, geometric construction/editing, orthographic projection, dimensioning and text annotations, printing/plotting, and an introduction to 3-dimensional drafting/design. (Grade Only)

Prerequisites/Corequisites: Course Completion or Current Enrollment in APTECH 45 OR INDE 50

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:

IGETC:	Transfer Area	Effective:	Inactive:
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CSU Transfer:	Transferable	Effective:	Fall 1988	Inactive:
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UC Transfer:	Transferable	Effective:	Fall 1999	Inactive:
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CID:

Certificate/Major Applicable:

Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:

Upon successful completion of this course, students will be able to:

1. Demonstrate knowledge of AutoCAD program organization
2. Execute file management operations within the Windows and AutoCAD interface
3. Execute CAD drafting/design commands
4. Set up drawing environments with AutoCAD
5. Utilize geometric positioning tools when executing precise drafting/design work
6. Generate and edit geometric constructions and dimensioning and text annotations
7. Generate and edit multi-view and orthographic projection drawings
8. Demonstrate proficiency using AutoCAD blocks
9. Effectively control printing/plotting of AutoCAD drawing files
10. Construct a 3D model

Topics and Scope:

- I. Introduction to the computer as a drafting/design tool with emphasis on hardware and software
 - A. Windows desktop and Windows File Explorer navigation
 - B. Mouse usage
 - C. Keyboard entry
 - D. File management
- II. Accessing AutoCAD commands via: ribbon, toolbars, palettes and keyboard
- III. Setting up the drawing environment: sheet size, units, model/layout tabs, layers, linetypes and lineweights
- IV. Geometric construction and positioning tools
 - A. Osnap
 - B. Directional distance entry

- C. Polar tracking
- D. Dynamic input
- E. Object tracking
- F. Grid and snap
- G. From and point filters
- V. Geometric constructions
 - A. Tangent arcs
 - B. Polygons
 - C. Ellipses
 - D. Concentric arcs
 - E. Parallel and perpendicular lines
 - F. Polar and rectangular arrays
 - G. Polylines
- VI. Multi-view drawings
 - A. Xlines for view to view projection layout
 - B. Correct depiction of visible, hidden, and symmetrical features at individual views
 - C. Linear, radial, and angular dimensions
- VII. AutoCAD Blocks: creating, inserting and redefining blocks
- VIII. Plotting: sheet size, plot scale, lineweights and color
- IX. 3D surface modeling: wire-frame and 3Dfaces

The above Topics and Scope apply to both lecture and lab course components in an integrated format.

Assignment:

1. Assignment reading: 2-10 pages per CAD assignment.
2. Quizzes: 0-4
3. Final exam

Lab Assignments:

1. CAD assignments: 12-15

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

Writing
0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

CAD assignments

Problem solving
10 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

CAD assignments

Skill Demonstrations
45 - 60%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes and final exam

Exams
20 - 35%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

AutoCAD 2015: A Problem - Solving Approach, Basic and Intermediate Tickoo, CAD/CIM Technologies, 2015

AutoCAD and Its Applications Basics 2015. Shumaker, Goodheart-Willcox. 2015

Instructor prepared materials